

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant:	Jerry Shan	§		
Filed:	05/09/2001	§		
TC/A.U.:	3621	§		
Examiner:	Calvin L. Hewitt II	§		
Title:	AN ON-LINE	§		
	SHOPPING	§		
	CONVERSION	§		
	SIMULATION	§		
	MODULE	§		
Docket No.:	10007924-1	§		
	(HPC.0857US)	§		

Mail Stop Appeal Brief-Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 1, 4, 6-10, 13, 15-35 and 37-42 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is the Hewlett-Packard Development Company, LP. The Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 11445 Compaq Center Drive West, Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1, 4, 6-10, 13, 15-35 and 37-42 have been finally rejected and are the subject of this appeal. Claims 2, 3, 5, 11, 12, 14 and 36 have been canceled.

IV. STATUS OF AMENDMENTS

No amendment after the final rejection of July 27, 2009 has been submitted. Therefore, all amendments have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 1 recites a method for predicting whether an on-line shopper will be converted into becoming a purchaser of an item based on sales promotions offered by an on-line vendor (Spec., p. 5, ln. 21 – p. 6, ln. 5), comprising the steps of:

storing customer profile information (Fig. 2:202) corresponding to a plurality of on-line shoppers (Spec., p. 6, ln. 22 – p. 7, ln. 4);

storing customer web log information (Fig. 2:203) corresponding to the plurality of on-line shoppers (Spec., p. 7, ln. 6-17);

storing attributes (Fig. 2:204) corresponding to a plurality of sales promotions that have been offered (Spec., p. 7, ln. 19 – p. 8, ln. 7);

inputting the customer profile information, the web log information and the attributes corresponding to the plurality of sales promotions into a model (Fig. 1:103) for simulating, by a computer (Fig. 3:301), shopping behavior as a function of the customer profile information and the attributes corresponding to the plurality of sales promotions (Spec., p. 6, ln. 7-19; p. 8, ln. 9 – p. 9, ln. 12); and

offering promotions based on the model (Spec., p. 2, ln. 18-20).

Independent claim 10 recites a computer-readable medium (Fig. 3:303, 304, 305; Spec., p. 16, ln. 1-7) having stored thereon instructions for predicting whether an on-line shopper will be converted into becoming a purchaser of an item based on sales promotions offered by an on-line vendor (Spec., p. 5, ln. 21 – p. 6, ln. 5), the instructions comprising the steps of:

storing customer profile information (Fig. 2:202) corresponding to a plurality of on-line shoppers (Spec., p. 6, ln. 22 – p. 7, ln. 4);

storing customer web log information (Fig. 2:203) corresponding to the plurality of on-line shoppers (Spec., p. 7, ln. 6-17);

storing attributes (Fig. 2:204) corresponding to a plurality of sales promotions that have been offered (Spec., p. 7, ln. 19 – p. 8, ln. 7);

inputting the customer profile information, the web log information and the attributes corresponding to the plurality of sales promotions into a model (Fig. 1:103) for simulating shopping behavior as a function of the customer profile information and the attributes corresponding to the plurality of sales promotions (Spec., p. 6, ln. 7-19; p. 8, ln. 9 – p. 9, ln. 12); and

offering promotions based on the model (Spec., p. 2, ln. 18-20).

Independent claim 35 recites a method for predicting what types of on-line shoppers will make purchases based on offered sales promotions (Spec., p. 5, ln. 21 – p. 6, ln. 5), comprising:

obtaining profile information (Fig. 2:202) for a plurality of shoppers (Spec., p.6, ln. 22 – p. 7, ln. 4);

obtaining a set of attributes (Fig. 2:204) pertaining to sales promotions that were offered to the shoppers (Spec., p. 7, ln. 19 – p. 8, ln. 7);

obtaining behavioral information (Fig. 2:203) regarding on-line shopping behaviors of the shoppers (Spec., p. 7, ln. 6-17);

based on the behavioral information, using, by a computer (Fig. 3:301), a mathematical model (Fig. 1:103) to relate the attributes pertaining to the sales promotions to the profile information in order to estimate effectiveness of a particular sales promotion with respect to at least one specified shopper (Spec., p. 6, ln. 7-19; p. 8, ln. 9 – p. 9, ln. 12; p. 10, ln. 14-17); and

offering promotions based on the mathematical model (Spec., p. 2, ln. 18-20).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. **Claims 1, 10, 19-25, 27-33, 35 and 37-40 were rejected under 35 U.S.C. § 102(b) as clearly anticipated by Gerace (U.S. Patent No. 5,848,396).**
- B. **Claims 4, 6-9, 13, 15-18, 26-34, 41 and 42 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gerace.**

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

- A. **Claims 1, 10, 19-25, 27-33, 35, and 37-40 were rejected under 35 U.S.C. § 102(b) as clearly anticipated by Gerace (U.S. Patent No. 5,848,396).**

1. **Claims 1, 10, 19, 20, 23-25, 27, 28, 31-33.**

It is respectfully submitted that claim 1 is clearly not anticipated by Gerace.

Claim 1 recites a method for predicting whether an on-line shopper will be converted into becoming a purchaser of an item based on **sales promotions offered** by an on-line vendor, comprising:

- storing customer profile information corresponding to a plurality of on-line shoppers;
- storing customer web log information corresponding to the plurality of on-line shoppers;
- storing attributes corresponding to a plurality of **sales promotions** that have been **offered**;
- inputting the customer profile information, the web log information and the attributes corresponding to the plurality of **sales promotions** into a model for simulating, by a computer, shopping behavior as a function of the customer profile information and the attributes corresponding to the plurality of **sales promotions**; and
- **offering** promotions based on the model.

The purported invention of Gerace is directed to “displaying customized agate information to a computer user.” Gerace, 2:7-8. Examples of “agate” information discussed in Gerace include telephone listings, classified advertisements, weather reports, sports scores and statistics, market data, books and recordings in print, and television and film listings. *Id.*, 1:8-13. The problem purported to be addressed by Gerace is that “[t]o date ... there is no general agate provider on the Web.” *Id.*, 1:66-67. As further explained in Gerace, agate objects are used to provide agate information, including stock information, advertisements, sports statistics, weather reports and the like. *Id.*, 2:61-66.

Displaying customized agate information as taught by Gerace is quite different from the claimed subject matter. Note that claim 1 recites “storing attributes corresponding to a plurality of **sales promotions** that have been **offered**.” Claim 1 also recites inputting customer profile information, Web log information, and attributes corresponding to the plurality of **sales promotions** into a model for simulating shopping behavior as a function of the customer profile information and the attributes corresponding to the plurality of **sales promotions**. Moreover, claim 1 further recites **offering promotions** based on the model.

A person of ordinary skill in the art would understand that displaying agate information including customized advertisements is different from offering sales promotions. This understanding of a person of ordinary skill in the art is supported by usage of the term “promotions” or “sales promotions” throughout the present application.

For example, page 9 lines 15-17 of the Specification notes that,

“A promotion is represented by a set of attributes. For example, the set of attributes can include the following: discount rate, free shipping & handling, rebate, special event promotional discount.”

Similarly, page 7 line 27 through page 8 line 2 of the Specification explains,

“Promotions can include sales, upgrades, extended warranties, buy-one-get-one free, financing packages, free options, rebates, coupons, donations to charities, free gifts, etc.”

Page 2 lines 2-6 of the Specification notes that

“... on-line retailers can offer promotions such as sales, buy-one-get-one-free, donating a portion of the sale to a customer’s favorite charity, extended warranties, frequent-buyer programs, upgrades, financing packages, etc. However, the more promotions lavished into converting potential customers . . .”

Page 3 lines 6-7 of the Specification refers to “promotions offered by an on-line vendor”.

From the context of claim 1 itself and usage of the term throughout the present application, it is clear that “promotions” or “sales promotions” refer to the substantive terms of deals that are used to attract customers. Such promotions that are offered are different from agate information (including customized advertisements) displayed in Gerace.

Although Gerace describes a tracking and profiling member for recording user activity with respect to agate information displayed through a data assembly (Gerace, 2:8-11), there is no teaching or hint in Gerace of storing attributes corresponding to a plurality of **sales promotions** that have been **offered**. As further explained by Gerace, a regression analysis is performed on a recorded history of users viewing advertisements, such that profiles of target users can be refined based on the regression analysis. *Id.*, 2:42-46. The regression analysis weights the relative importance of psychographic and/or demographic characteristics of users, such that advertisements can become better targeted to users having an interest in the information (content and presentation/format of advertisement). *Id.*, 2:48-51. Thus, it is important to note that the focus of the targeted advertisements described in Gerace is that advertisements are targeted based on the content and presentation/format of each advertisement. In contrast, claim 1 relates to using a model to simulate shopping behavior as a function of the customer profile information

and the attributes corresponding to the plurality of **sales promotions that have been offered**, and offering promotions based on the model.

There is not much explanation in Gerace regarding the content of each advertisement. It appears that the only description regarding the meaning of “content” in Gerace is at the following passages: column 17 lines 66-67, stating, “the ad content and information are stored in the Ad Objects 33d”; column 12 lines 42-56, which provides a limited description of some of the components of an Ad Object 33d; and Figure 5D which illustrates an Ad Object 33d.

These portions of Gerace indicate that “content” refers only to the specific material that is included within the advertisement. There does not appear to be any hint given in Gerace of storing attributes corresponding to **sales promotions that have been offered**, or of simulating shopping behavior as a function of attributes corresponding to the **sales promotions**.

In addition, it is noted that although Gerace describes running a regression analysis to see what characteristics are important and who (type of user profile) the advertisement appeals to most (Gerace, 18:15-18), such regression analysis does not constitute a **model for simulating shopping behavior** as a function of the customer profile information and the attributes corresponding to the plurality of sales promotions.

As explained specifically by Gerace, profiles of target users are refined based on the regression analysis. *Id.*, 2:45-46. A performance routine employs regression techniques to provide performance reports. *Id.*, 3:15-17. Also, a program calculates a regression on targeted demographic groups for the advertisements, and the results of the regression calculation are used to suggest other demographic characteristics that are important factors in the number of click throughs and/or number of purchases. *Id.*, 13:12-17. Gerace also states that a program performs a traditional regression analysis of tracked criteria, which results in null alternative hypothesis

testing to determine significance of criteria/variables, and in squared correlation and squared correlation testing to determine the weight of each criteria. *Id.*, 15:27-35.

The regression analysis as performed by Gerace does not constitute inputting customer profile information, Web log information, and attributes corresponding to sales promotions into a **model for simulating shopping behavior** as a function of the customer profile information and the attributes corresponding to the sales promotions.

In view of the foregoing, it is respectfully submitted that claim 1 and its dependent claims are allowable over Gerace.

Independent claim 10 and its dependent claims are similarly allowable over Gerace.

Reversal of the final rejection of the above claims is respectfully requested.

2. Claims 21, 29.

Claims 21 and 29 depend from respective base claims 1 and 10, and are therefore allowable for at least the same reasons as the corresponding base claims. Moreover, claim 21 further recites storing product information corresponding to a plurality of products offered for sale by the on-line vendor and inputting the product information into the model, where the shopping behavior also is simulated as a function of the product information. The Examiner in the 07/27/2009 Office Action did not explain what in Gerace constitutes the product information corresponding to a plurality of products that is input into a model such that shopping behavior also is simulated as a function of the product information.

Gerace refers to recording user activity with respect to a page information displayed, to provide a history and/or pattern of user activity that is interpreted as a user's habits and/or preferences. Gerace, 2:6-15. Demographics of each user are also recorded. *Id.*, 2:30-31. History of user viewing advertisements are recorded. *Id.*, 2:36-38. However, there is absolutely

no hint whatsoever of inputting **product information** regarding a plurality of products offered for sale by an on-line vendor, where the product information is input into a model such that **shopping behavior is simulated as a function of the product information.**

Claim 21 (and claim 29) are therefore further allowable for the foregoing reasons.

Reversal of the final rejection of the above claims is respectfully requested.

3. Claims 22, 30.

Claims 22 and 30 depend respectively from base claims 1 and 10, and are therefore allowable for at least the same reasons as corresponding base claims. Claim 22 further recites using the model to compute a percentage likelihood that a shopper will be converted into becoming a purchaser. In the 07/27/2009 Office Action, the Examiner argued that Gerace discloses inputting buyer purchases to adjust how advertisements are displayed to customers. 07/27/2009 Office Action at 3. According to the Examiner, “some customers are excluded from the population of customers who are to view ads.” *Id.* From this, the Examiner concluded that the system of Gerace “necessarily calculates a percentage likelihood that one customer is more likely to make a purchase over another.” *Id.*

The rejection does not address the specific language of claim 22, which recites that the model is used to compute a percentage likelihood that a shopper will be converted into becoming a purchaser. Claim 22 does not recite calculating a percentage likelihood that one customer is more likely to make a purchase over another, as argued by the Examiner.

The passage in column 18 of Gerace cited by the Examiner against claim 22 refers to a program combining regression analysis with a weighting technique to achieve real-time, automatic optimization. Gerace, 18:10-13. After a large number of hits, the program runs a regression on a subject advertisement package object to see what characteristics are important,

and who (type of user profile) the advertisement appeals to most. *Id.*, 18:15-18. The program then automatically enters weighting information based on the regression to create a target system and runs the advertisement. *Id.*, 18:18-22. However, there is absolutely no hint in column 18 of Gerace regarding using the model to compute a percentage likelihood that a shopper will be converted into becoming a purchaser.

Claim 22 (and claim 30) are therefore further allowable for the foregoing reasons.

Reversal of the final rejection of the above claims is respectfully requested.

4. Claims 35, 37-40.

With respect to claim 35, it is respectfully submitted that Gerace fails to disclose obtaining a set of attributes pertaining to **sales promotions** that were **offered** to the shoppers. Moreover, Gerace fails to disclose using a mathematical model (based on behavioral information regarding on-line shopping behaviors of shoppers) to relate the attributes pertaining to the **sales promotions** to the profile information in order to estimate effectiveness of a particular **sales promotion** with respect to at least one specified shopper. Moreover, Gerace fails to disclose **offering promotions** based on the mathematical model.

Reasons regarding why Gerace fails to disclose the foregoing combination of elements is discussed above in connection with claim 1. Therefore, claim 35 and its dependent claims are allowable over Gerace.

Reversal of the final rejection of the above claims is respectfully requested.

B. Claims 4, 6-9, 13, 15-18, 26-34, 41 and 42 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gerace.

1. Claims 7, 8, 16, 17, 26 34, 41.

In view of the allowability of base claims over Gerace, the obviousness rejection of the foregoing dependent claims is erroneous.

Reversal of the final rejection of the above claims is respectfully requested.

2. Claims 4, 13.

In view of the allowability of base claims 1 and 10 over Gerace, the obviousness rejection of dependent claims 4 and 13 of Gerace has been overcome. Moreover, the Examiner conceded that Gerace fails to disclose the logistic regression model recited in claims 4 and 13. However, the Examiner argued that such a logistic regression model would be “well-known” and concluded that claims 4 and 13 would be obvious.

The Examiner has failed to cite any objective evidence stating that using a logistic regression model in the context of the claimed subject matter. Thus, the Examiner has failed to establish why a person of ordinary skill in the art would have been led to the claimed subject matter—the obviousness rejection is therefore defective.

Reversal of the final rejection of the above claims is respectfully requested.

3. Claims 6, 15.

In view of the allowability of base claims 1 and 10 over Gerace, it is respectfully submitted that the obviousness rejection of dependent claims 6 and 15 over Gerace has also been overcome. Moreover, each of claims 6 and 15 recites that the model is based on traditional logistical regression theory and on maximum utility theory. The Examiner conceded that Gerace

fails to disclose the maximum utility theory of these claims, but yet concluded that use of maximum utility theory would be well known. There is no objective evidence cited by the Examiner to support this conclusory remark. Therefore, the obviousness rejection of claims 6 and 15 is clearly erroneous.

Reversal of the final rejection of the above claims is respectfully requested.

4. Claims 9, 18.

In view of the allowability of base claims 1 and 10 over Gerace, the obviousness rejection of dependent claims 9 and 18 over Gerace has been overcome. Moreover, claims 9 and 18 further define attributes corresponding to the plurality of sales promotions. The Examiner conceded that Gerace fails to disclose the subject matter of claims 9 and 18, but yet argued that the claimed subject matter would be obvious to a person of ordinary skill. The Examiner did not cite to any objective evidence that would support such a conclusion, and therefore, the obviousness rejection is clearly defective.

Reversal of the final rejection of the above claims is respectfully requested.

5. Claim 42.

In view of the allowability of base claim 35 over Gerace, the obviousness rejection of claim 42 has been overcome. Moreover, claim 42 is further allowable for similar reasons as stated above with respect to claims 9 and 18.

Reversal of the final rejection of the above claim is respectfully requested.

CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

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VIII. APPENDIX OF APPEALED CLAIMS

The claims on appeal are:

1 1. A method for predicting whether an on-line shopper will be converted into
2 becoming a purchaser of an item based on sales promotions offered by an on-line vendor,
3 comprising the steps of:
4 storing customer profile information corresponding to a plurality of on-line shoppers;
5 storing customer web log information corresponding to the plurality of on-line shoppers;
6 storing attributes corresponding to a plurality of sales promotions that have been offered;
7 inputting the customer profile information, the web log information and the attributes
8 corresponding to the plurality of sales promotions into a model for simulating, by a computer,
9 shopping behavior as a function of the customer profile information and the attributes
10 corresponding to the plurality of sales promotions; and
11 offering promotions based on the model.

1 4. The method of Claim 1, wherein the model comprises a logistic regression model.

1 6. The method of Claim 4, wherein the model is based on traditional logistical
2 regression theory and on the maximum utility theory.

1 7. The method of Claim 1, wherein the customer profile information includes one or
2 more of age, sex, religion, income, ethnicity, marital status, geographical location, number of
3 children, interests, hobbies, spending habits, and zip code.

1 8. The method of Claim 1, wherein the customer web log information includes one
2 or more of data regarding when a customer accessed a web site, how long the customer visited
3 the web site, which items were of interest, how the customer heard about the web site, whether
4 the customer saw a promotion, whether the customer was motivated to taking action as a result
5 of the promotion, whether the customer inspected an item, whether the customer put the item
6 back, whether the customer bought the item, and a quantity of items purchased.

1 9. The method of Claim 1, wherein the attributes corresponding to the plurality of
2 sales promotions include one or more of sales, upgrades, extended warranties, buy-one-get-one
3 free, financing packages, free options, rebates, coupons, donations to charities, and free gifts.

1 10. A computer-readable medium having stored thereon instructions for predicting
2 whether an on-line shopper will be converted into becoming a purchaser of an item based on
3 sales promotions offered by an on-line vendor, the instructions comprising the steps of:
4 storing customer profile information corresponding to a plurality of on-line shoppers;
5 storing customer web log information corresponding to the plurality of on-line shoppers;
6 storing attributes corresponding to a plurality of sales promotions that have been offered;
7 inputting the customer profile information, the web log information and the attributes
8 corresponding to the plurality of sales promotions into a model for simulating shopping behavior
9 as a function of the customer profile information and the attributes corresponding to the plurality
10 of sales promotions; and
11 offering promotions based on the model.

1 13. The computer-readable medium of Claim 10, wherein the model comprises a
2 logistic regression model.

1 15. The computer-readable medium of Claim 13, wherein the model is based on
2 traditional logistical regression theory and on the maximum utility theory.

1 16. The computer-readable medium of Claim 10, wherein the customer profile
2 information includes one or more of age, sex, religion, income, ethnicity, marital status,
3 geographical location, number of children, interests, hobbies, spending habits, and zip code.

1 17. The computer-readable medium of Claim 10, wherein the customer web log
2 information includes one or more of data regarding when a customer accessed a web site, how
3 long the customer visited the web site, which items were of interest, how the customer heard
4 about the web site, whether the customer saw a promotion, whether the customer was motivated
5 to taking action as a result of the promotion, whether the customer inspected an item, whether the
6 customer put the item back, whether the customer bought the item, and a quantity of items
7 purchased.

1 18. The computer-readable medium of Claim 10, wherein the attributes corresponding
2 to the plurality of sales promotions include one or more of sales, upgrades, extended warranties,
3 buy-one-get-one free, financing packages, free options, rebates, coupons, donations to charities,
4 and free gifts.

1 19. The method of Claim 1, further comprising a step of using the model to tailor
2 sales promotions to individual shoppers.

1 20. The method of Claim 19, wherein sales promotions automatically are customized
2 to a shopper based on customer profile information for said shopper.

1 21. The method of Claim 1, further comprising steps of storing product information
2 corresponding to a plurality of products offered for sale by the on-line vendor and inputting the
3 product information into the model, and wherein the shopping behavior also is simulated as a
4 function of the product information.

1 22. The method of Claim 1, further comprising a step of using the model to compute a
2 percentage likelihood that a shopper will be converted into becoming a purchaser.

1 23. The method of Claim 1, further comprising a step of using the model to simulate a
2 conversion of a shopper into a purchaser.

1 24. The method of Claim 1, further comprising steps of using a simulator based on
2 the model, varying attributes corresponding to the plurality of sales promotions input into the
3 simulator, and then observing results generated by the simulator.

1 25. The method of Claim 1, further comprising a step of continuously updating and
2 improving the model based on new information.

1 26. The method of Claim 1, further comprising a step of using an optimization engine
2 to generate statistically driven sales promotion plans that have been optimized with respect to at
3 least one objective function.

1 27. The computer-readable medium of Claim 10, wherein the instructions further
2 comprise a step of using the model to tailor sales promotions to individual shoppers.

1 28. The computer-readable medium of Claim 27, wherein sales promotions
2 automatically are customized to a shopper based on customer profile information for said
3 shopper.

1 29. The computer-readable medium of Claim 10, wherein the instructions further
2 comprise steps of storing product information corresponding to a plurality of products offered for
3 sale by the on-line vendor and inputting the product information into the model, and wherein the
4 shopping behavior also is simulated as a function of the product information.

1 30. The computer-readable medium of Claim 10, wherein the instructions further
2 comprise a step of using the model to compute a percentage likelihood that a shopper will be
3 converted into becoming a purchaser.

1 31. The computer-readable medium of Claim 10, wherein the instructions further
2 comprise a step of using the model to simulate a conversion of a shopper into a purchaser.

1 32. The computer-readable medium of Claim 10, wherein the instructions further
2 comprise steps of using a simulator based on the model, varying attributes corresponding to the
3 plurality of sales promotions input into the simulator, and then observing results generated by the
4 simulator.

1 33. The computer-readable medium of Claim 10, wherein the instructions further
2 comprise a step of continuously updating and improving the model based on new information.

1 34. The computer-readable medium of Claim 10, wherein the instructions further
2 comprise a step of using an optimization engine to generate statistically driven sales promotion
3 plans that have been optimized with respect to at least one objective function.

1 35. A method for predicting what types of on-line shoppers will make purchases
2 based on offered sales promotions, comprising:
3 obtaining profile information for a plurality of shoppers;
4 obtaining a set of attributes pertaining to sales promotions that were offered to the
5 shoppers;
6 obtaining behavioral information regarding on-line shopping behaviors of the shoppers;
7 based on the behavioral information, using, by a computer, a mathematical model to
8 relate the attributes pertaining to the sales promotions to the profile information in order to
9 estimate effectiveness of a particular sales promotion with respect to at least one specified
10 shopper; and
11 offering promotions based on the mathematical model.

1 37. The method of Claim 35, further comprising a step of using the mathematical
2 model to tailor sales promotions to individual shoppers.

1 38. The method of Claim 37, wherein sales promotions automatically are customized
2 to a shopper based on customer profile information for said shopper.

1 39. The method of Claim 35, further comprising steps of using a simulator based on
2 the mathematical model, varying attributes pertaining to the sales promotions input into the
3 simulator, and then observing results generated by the simulator.

1 40. The method of Claim 35, further comprising a step of continuously updating and
2 improving the mathematical model based on new information.

1 41. The method of Claim 35, further comprising a step of using an optimization
2 engine to generate statistically driven promotion plans that have been optimized with respect to
3 at least one objective function.

1 42. The method of Claim 35, wherein the attributes pertaining to the sales promotions
2 include one or more of sales, upgrades, extended warranties, buy-one-get-one free, financing
3 packages, free options, rebates, coupons, donations to charities, free gifts, discount rate, free
4 shipping and handling, rebate and special event promotional discount.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.